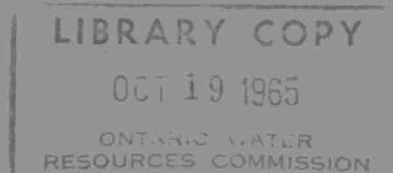


THE
ONTARIO WATER RESOURCES
COMMISSION
WATER QUALITY SURVEY
of
KAMANISKEG LAKE

September, 1965

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THE
ONTARIO WATER RESOURCES
COMMISSION

Report on a
WATER QUALITY SURVEY

of

KAMANISKEG LAKE

in the
COUNTY OF HASTINGS
and the
COUNTY OF RENFREW

Division of Sanitary Engineering
September 1965

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Report on a
WATER QUALITY SURVEY
of
KAMANISKEG LAKE

INTRODUCTION

In response to enquiries received concerning the water quality of Kamaniskeg Lake, investigations were made by OWRC staff on July 14 and August 10, 1965, to determine the quality of these waters.

Water samples were collected from the lake at locations which are shown on the appended map. The pertinent laboratory results are similarly attached.

INTERVIEWS WITH OFFICIALS

In conjunction with the investigations which were performed, discussions were held with the following officials:

Mr. T. A. Conway, Reeve, Village of Barry's Bay;
Mr. W. J. Goulet, Clerk-Treasurer, Village of Barry's Bay;
Mr. R. C. Briggs, Reeve, Townships of Sherwood, Jones and Burns;
Mr. J. Watt, Chief Public Health Inspector, Renfrew County Health Unit.

KAMANISKEG LAKE

This lake is a somewhat elongated body of water which broadens in its southern part. The northern section of the lake is known as Barry's Bay and lies within the County of Renfrew. The southern and larger section of the lake lies, for

the most part, in the County of Hastings. The municipalities concerned in these counties are as follows:

County of Renfrew: Village of Barry's Bay
Township of Sherwood
County of Hastings: Township of Bangor

Although numerous small watercourses contribute flows to Kamaniskeg Lake, it is mainly fed and drained by the Madawaska River which has its ingress and egress at the southern part of the lake.

Considerable recreational development has occurred on the shoreline of Kamaniskeg Lake, the principal centre of population being the Village of Barry's Bay which is located at the northern tip of the lake. This section of the lake bears the name of the village.

AREAS OF INVESTIGATION

Investigations were performed at two major recreational sites on the lakeshore, and at the Village of Barry's Bay, to locate any active or potential sources of surface water pollution. A water pollution survey of the village was made at that time, and the pertinent details of that survey will be described in a report which will be of specific interest to the village officials.

SAMPLING PROCEDURE

Water samples were obtained at selected locations to determine the presence of coliform organisms in the lake water.

INTERPRETATION AND SIGNIFICANCE OF LABORATORY RESULTS

The water samples were subjected to bacteriological examination since the presence of coliform organisms is used frequently as an index of faecal pollution in water. The request for this survey was based on the reported high concentration of coliform organisms in the lake water, but which was not revealed by this survey. The samples collected on July 14 were examined at the Peterborough Regional Laboratory of the Ontario Department of Health. The samples obtained on August 10 were submitted to the OWRC laboratory in Toronto. The Peterborough Regional Health Laboratory utilized the Most Probable Number (M.P.N.) method to provide an index of the number of coliform organisms per 100 cubic centimeters of the water sample. The Multiple Tube Fermentation technique was employed. The examinations performed at the OWRC laboratory employed the Membrane Filter technique, and the number of coliforms is reported per 100 millilitres of water. Although the presence of coliforms indicates pollution from human or animal excrement, or from some non-faecal sources, E. coli organisms are members of the coliform group and originate in the intestinal tract of humans and other warm-blooded animals. It is the opinion of the OWRC that the presence of coliforms in a watercourse should not exceed 2,400 organisms per 100 ml. of water. This limit usually is applied to waters used for such a purpose as bathing,

but does not obviate the fact that all surface waters should be adequately boiled or disinfected prior to human consumption.

SAMPLE RESULTS

Sample Point No. 1

As shown on the appended map, this sampling point is located at Hinterland Beach. The concentration of coliforms in this water sample was satisfactory for surface water. Investigations did not reveal that sanitary waste escapes from this summer resort to the lake.

Sample Point No. 2

No coliform organisms were revealed in the water sample collected from the lake at Chippawa Lodge. The sewage disposal facilities utilized at this recreational site are located relatively remote from the beach.

Sample Point No. 3

The coliform content of the sample obtained at the east shoreline of the lake as shown on the appended map was satisfactory.

Sample Point No. 4

The water sample obtained from the lake at the Department of Highways picnic area contained 2,400 coliform organisms per 100 ml. which is the maximum desirable limit.

Sample Point No. 5

According to the bacteriological examination performed, the water quality was satisfactory at the bathing area

serving the Village of Barry's Bay.

Sample Point No. 6

The laboratory results indicate the presence of a high coliform content on July 14 in the small creek which conducts drainage flows from the Village of Barry's Bay. The biochemical oxygen demand of these flows was low. An appreciable phenol content was revealed. The significance of these conditions will be discussed in the report pertaining to the water pollution survey of the Village of Barry's Bay.

Sample Point No. 7

The water sample obtained from the bay at the west side of the causeway extending to Mask Island contained a minimal coliform content.

Sample Point No. 8

According to the laboratory tests performed, normal conditions with respect to water quality prevailed in the small creek which empties into the bay just west of St. Francis Memorial Hospital in the Township of Sherwood. It is noteworthy, however, that the number of E. coli organisms was appreciable. Although the sub-surface sewage disposal system serving the hospital was being repaired at that time, there was no apparent indication that any of the sanitary waste was gaining access to the watercourse.

Sample Point No. M. 98.5 (not shown on appended map)

This sample point is located where a bridge spans the Madawaska River approximately three miles upstream from Kamaniskeg Lake. The bacteriological examination of a water sample obtained from the river at this location revealed no coliform organisms in the sample.

SUMMARY

A water quality survey of Kamaniskeg Lake was made by OWRC staff, with investigations and sampling being performed on July 14 and August 10, 1965.

The bacteriological examination of water samples collected from Kamaniskeg Lake during this survey revealed satisfactory conditions with respect to the presence of coli - form organisms.

RECOMMENDATION


Efforts should be continued to protect the water quality of Kamaniskeg Lake.

All of which is respectfully submitted,

District Engineer:


J. K. Theil

Approved by:


J. R. Barr, Director,
Division of Sanitary Engineering

Prepared by: R. G. Barrens
/mc

COUNTIES OF HASTINGS AND RENFREW

KAMANISKEG LAKE

ALL ANALYSES EXCEPT PH REPORTED IN
PPM UNLESS OTHERWISE INDICATED

DATE OF SAMPLE 1965	SAMPLE POINT No.	DESCRIPTION	5-DAY B.O.D.	SOLIDS			ANIONIC DETERGENTS AS ABS	PHENOL IN (PPB)	BACTERIOLOGICAL EXAMINATION		
				TOTAL	SUSP.	DISS.			COLIFORMS PER 100 ML (M.F.)	MOST PROBABLE NUMBER	
										TOTAL COLIFORMS	E. COLI
JULY 14	1	KAMANISKEG LAKE AT HINTERLAND BEACH							-	23	0
JULY 14	2	KAMANISKEG LAKE AT CHIPPAWA LODGE BEACH							-	0	0
AUG. 10	3	BARRY'S BAY AT EAST SHORELINE							120	-	-
AUG. 10	4	BARRY'S BAY AT INLET NEAR HWY. 62							2,400	-	-
JULY 14) AUG. 10)	5	BARRY'S BAY - BATHING AREA AT VILLAGE OF BARRY'S BAY							- 480	230 -	23 -
JULY 14) AUG. 10)	6	SMALL WATERCOURSE FLOWING THROUGH VILLAGE OF BARRY'S BAY - TO BAY	0.8 0.8	114 126	7 7	107 119	0.0 0.0		- 210	24,000 -	2,300 -

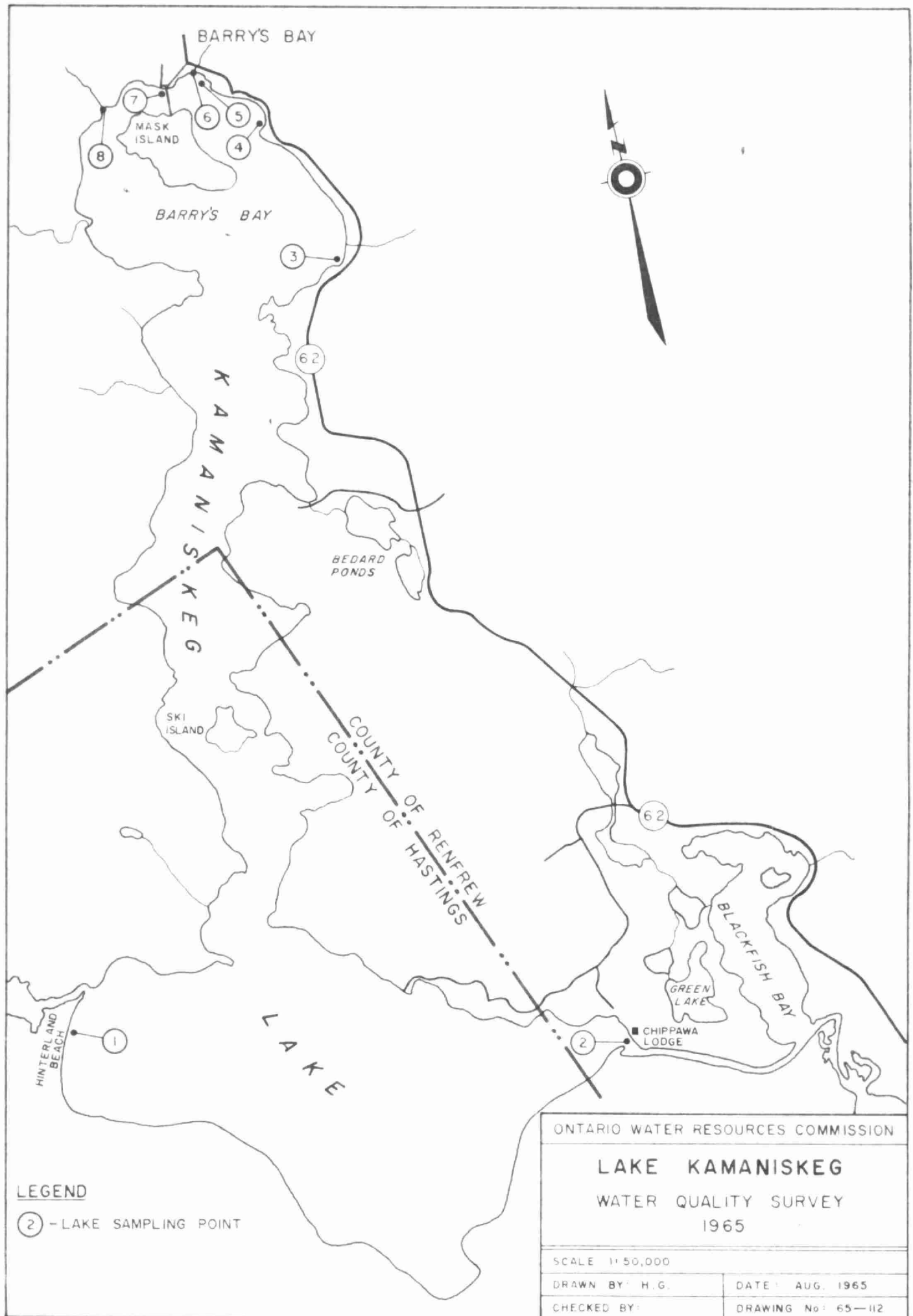
COUNTIES OF HASTINGS AND RENFREW

KAMANISKEG LAKE

(RIVER SURVEY TABLE - CONTINUED)

ALL ANALYSES EXCEPT PH REPORTED IN
PPM UNLESS OTHERWISE INDICATED

<u>DATE OF SAMPLE 1965</u>	<u>SAMPLE POINT No.</u>	<u>DESCRIPTION</u>	<u>5-DAY B.O.D.</u>	<u>SOLIDS</u>			<u>ANIONIC DETERGENTS AS ABS</u>	<u>BACTERIOLOGICAL EXAMINATION</u>		
				<u>TOTAL</u>	<u>SUSP.</u>	<u>DISS.</u>		<u>COLIFORMS PER 100 ML (MF)</u>	<u>MOST PROBABLE NUMBER TOTAL</u>	<u>E. COLI</u>
JULY 14	7	BARRY'S BAY AT WEST SIDE OF CAUSEWAY TO MASK ISLAND						-	23	23
JULY 14	8	SMALL WATERCOURSE FLOWING INTO BAY WEST OF ST. FRANCIS MEMORIAL HOSPITAL IN TWP. OF SHERWOOD	1.2	162	6	156	0.0		2,300	2,300
JULY 14	M.98.5	(NOT SHOWN ON MAP) MADAWASKA RIVER AT BRIDGE APPROXIMATELY 2.7 MILES UPSTREAM FROM KAMANISKEG LAKE						-	0	0



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